



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
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Des Gillen
Business Unit Leader
BP-Husky Refining, LLC
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Re: Revocation of 40 C.F.R. Part 63, Subpart UUU FCCU Bypass Monitoring AMP
BP-Husky Refining LLC, Oregon, Ohio

Dear Mr. Gillen:

BP-Husky Refining LLC (BP-Husky) owns and BP Products North America, Inc. (BP) operates a petroleum refinery in Oregon, Ohio (the Toledo Refinery). On January 9, 2007, the Environmental Protection Agency approved an Alternative Monitoring Plan (AMP) for the Toledo Refinery relating to bypass stack flow monitoring at the fluid catalytic cracking unit (FCCU) under the National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units (40 C.F.R. Part 63, Subpart UUU). Subsequent events at the Toledo Refinery have demonstrated that this AMP is not adequate for identifying when flow is present in the bypass stack. Therefore, EPA is revoking the January 9, 2007 AMP, effective 6 months from the date of this letter.

BACKGROUND

Requirement to Monitor Bypass Stack Flow

Subpart UUU at Section 63.1569(a)(1), requires compliance with one of four work practice standard options to prevent the release of hazardous air pollutants (HAPs) from bypass lines to the atmosphere. The Toledo Refinery elected Option 1 for its FCCU bypass line, which is set forth at 40 C.F.R. § 63.1569(a)(1)(i) and Subpart UUU, Table 36, and provides for the installation and operation of an automated system to determine whether flow is present. Correspondingly, 40 C.F.R. § 63.1569(c)(1) and Subpart UUU, Table 39, set forth procedures to demonstrate continuous compliance. More specifically, Tables 36 and 39 require that facilities opting to comply with Option 1 install and operate an automated system (including a flow indicator, level recorder, or electronic valve position monitor) to demonstrate, either continuously or at least every hour, whether flow is present in the bypass line, and continuously monitor and record the results of this system, or if the device is not equipped with a recording system, visually inspect the device at least once every hour and record whether the device is operating properly and whether flow is present in the bypass line.

BP-Husky AMP

On October 30, 2006, BP requested an AMP. Specifically, BP requested the use of a continuous temperature monitor to meet the requirements of 40 C.F.R. 63.1569(a)(1)(i) and (c)(1). On January 9, 2007, EPA approved this request. In the AMP, EPA wrote:

1. The temperature monitor normally reads a temperature at or around ambient. The FCCU inorganic HAPs performance test conducted on May 16, 2006 included in the Request shows ambient temperatures in the range of 38 F-40 F. During a bypass, the temperature reading would rise to over 500 F or greater in an instantaneous temperature spike. The bypass stack high temperature alarm will be set at above ambient but below 500 F.
2. Protocols will be in place to verify a bypass is occurring after the continuous temperature monitor indicates a temperature spike such as checking the CO boiler fuel usage and/or the CO Boiler steam production. When a bypass occurs, there would be a drop in steam production or an increase in the refinery fuel gas flow rate due to the loss of the Regenerator's exhaust through the bypass.

UPDATED INFORMATION AND NEED TO REVOKE AMP

In its October 28, 2015 CEMS report, BP-Husky reported that from July 6, 2015, through July 15, 2015, a third party contractor detected the presence of combustion products (NO_x, CO, and SO₂) in the FCCU bypass stack, indicating that some of the FCCU regenerator exhaust gases were escaping to the atmosphere through the bypass stack. In this report, BP-Husky reported that the water seal was in place but did not identify whether or not there were any changes to the bypass stack temperature. Because the water seal was in place and the bypass stack temperature was less than 500°F, BP-Husky asserted that the bypass stack was not in service during the 3rd quarter and thus reported no excess emissions through the bypass stack and no operating time of the bypass stack.

According to internal BP-Husky correspondence, by December 2015, visible emissions from the bypass stack were apparent, with excess opacity for half of the 4th quarter, and the stack temperature had risen by 40°F. In its January 27, 2016 CEMS report, BP-Husky stated “[a]s first stated in the 3rd Quarter 2015 report, a continuous small slip stream of gas has been observed leaving the bypass stack, first noticed by a third party with certified online monitoring. However, the water seal on the bypass stack was continuously in place for the entire quarter, and is confirmed by the bypass stack temperature.” BP-Husky continued to report that there were no excess emissions through the bypass stack and no operating time of the bypass stack. BP-Husky continued reporting this way until the unit was taken out of service and repairs were made in May 2016. When the unit was taken out of service to be repaired, BP-Husky found that corrosion in the seal pot had created a hole in the dip tube portion of the seal pot. This hole would have allowed a slipstream of FCCU gas into the bypass stack despite the presence of a water seal. A slipstream of gas would not have caused a sudden temperature spike above 500°F, though as the deterioration of the pot worsened and the hole grew larger, allowing increasing amounts of FCCU gas into the bypass stack, the bypass stack temperature would have risen, consistent with BP-Husky’s observations of rising temperature in the bypass stack (though it did not exceed 500°F).

The July 2015 through May 2016 event has demonstrated that the January 9, 2007 AMP is not adequate to continuously detect, or at least detect every hour, whether flow is present in the bypass line. Therefore, EPA is revoking this AMP, effective 6 months from the date of this letter, in order to provide BP-Husky with adequate time to implement a work practice compliance option in compliance with the requirements of 40 C.F.R. 63.1569(a)(1).

Within 6 months of the date of this letter, BP-Husky shall comply with the applicable requirements of 40 C.F.R. 63.1569, including compliance with a work practice compliance option required by 40 C.F.R. 63.1569(a)(1) and Subpart UUU Table 36, and with the applicable monitoring, recording, and reporting requirements of 40 C.F.R. 63.1569(c) and Subpart UUU Table 39. Within 7 months of the date of this letter, BP-Husky shall notify EPA of the compliance option it elects and identify how that compliance option will ensure that any flow to the bypass line will either be: accurately detected, monitored, and reported; access to the bypass line eliminated; or such flow vented to a control device. The notification must also describe how a reoccurrence of the event that occurred at the BP-Husky FCCU from July 2015 through May 2016 would be identified or addressed under BP-Husky's chosen compliance option.

If you have any questions about this determination, please contact Virginia Galinsky at (312) 353-2089.

Sincerely,

Sara Breneman
Chief
Air Enforcement and Compliance Assurance Branch

cc: James Kavalec, Ohio EPA
Bob Hodanbosi, Ohio EPA
Karen Granata, City of Toledo